IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

C. Amendments to the Claims.

1. (Previously Amended) A method, comprising:

varying a dopant supply rate for a doped insulating layer according to a variation in temperature of a substrate on which the doped insulating layer is being formed; and

varying the dopant supply rate includes increasing the dopant supply rate as the substrate temperature increases.

2. (Original) The method of claim 1, wherein:

varying the dopant supply rate includes providing different dopant supply rates for different time periods.

3. (Original) The method of claim 2, wherein:

the different time periods include a plurality of time periods of the same length, the dopant supply rate being different during at least two of the time periods.

4. (Original) The method of claim 1, wherein:

the doped insulating layer is formed with a high density plasma deposition process.

5. (Original) The method of claim 1, wherein:

the doped insulating layer comprises phosphosilicate glass.

6. (Cancelled)

7. (Original) The method of claim 1, further including:

etching a contact hole through the doped insulating layer to the substrate.

8. (Original) The method of claim 7, wherein:

the doped insulating layer comprises phosphosilicate glass having a phosphorous dopant concentration of greater than about 6% by weight.

9. (Original) The method of claim 1, further including:

varying the dopant supply rate over a first period of time and maintaining a constant dopant supply rate for a second period of time.

10. (Original) The method of claim 9, wherein:

the first period of time precedes the second period of time.

11. **(Currently Amended)** A method, comprising:

compensating for a temperature dependent dopant gradient in a doped insulating film comprising silicon oxide having a phosphorous concentration greater than about 7% by weight, by varying a dopant supply rate as the doped insulating film is formed**; wherein**

**the dopant supply rate is varied for an initial thickness of the doped insulating film to compensate for variations in a substrate temperature**.

12. (Cancelled)

13. **(Cancelled)** The method of claim 11, wherein:

the dopant supply rate is varied for an initial thickness of the doped insulating film to compensate for variations in a substrate temperature.

14. **(Currently Amended)** The method of claim ~~13~~11, wherein:

the initial thickness is no more than 0.8 microns.

15. **(Currently Amended)** The method of claim ~~13~~11, wherein:

the initial thickness is no more than 0.4 microns.

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16. (Original) The method of claim 11, wherein:

varying the dopant supply rate includes altering a supply rate ratio given by a dopant source supply rate divided by the dopant source supply rate plus a base material source supply rate.

17. (Original) The method of claim 16, wherein:

the dopant source supply rate includes a flow rate for a source of phosphorous, the base material source supply rate includes a flow rate for a source of silicon, and the supply rate ratio varies from about 30% to 45%.

18. (Original) The method of claim 11, further including:

varying the dopant supply rate for a first portion of the insulating film and maintaining a constant dopant supply rate for a second portion of the insulating film.

19. (Original) The method of claim 11, further including:

varying the dopant supply rate includes closed loop control of dopant source supply rate with active temperature feedback from a reaction chamber.

20. (Withdrawn) A semiconductor device, comprising:

a doped insulating film formed with a high density plasma on a substrate, the doped insulating film having a dopant concentration greater than about 7% by weight and varying by less than about 1% by weight over an initial thickness of no more than 0.2 microns.

21. (Withdrawn) The semiconductor device of claim 20, wherein:

the doped insulating film comprises silicon oxide with a phosphorous concentration greater than about 7% by weight and varying by less than about 1% by weight.

22. (Withdrawn) The semiconductor device of claim 20, wherein:

the high density plasma includes dissociated phosphine and silane.